Landbird Monitoring Protocol for Klamath Network Parks

Standard Operating Procedure (SOP) #3:
Using the Global Positioning System

Version 1.0

Revision History Log:

Previous Version	Revision Date	Author	Changes Made	Reason for Change	New Version

This SOP explains the procedures for use of the Global Positioning System, including set-up of Garmin 10XL GPS units, uploading and downloading coordinates, locating field sites, and marking locations. It is the responsibility of the Project Lead to set up the Garmin units prior to the start of the field season. Each technician and intern should be familiar with the GPS unit settings and should check the settings prior to using the GPS unit each morning.

Set-up of Garmin 10XL GPS Units
1. Use PAGE button to get to Main Menu
2. Use arrows to highlight SETUP MENU and press ENTER into SETUP MENU
3. Highlight SYSTEM and press ENTER into SYSTEM SETUP
4. Assure the following settings are correct:
    a. MODE: Normal
    b. OFFSET: -07:00
    c. DATE: Verify that the date is correct
    d. TIME: Verify that the time is correct
    e. HOURS: 24
    f. LIGHT: 15 SEC
    g. TONE: NONE
5. Press PAGE to exit SYSTEM SETUP
6. Highlight NAVIGATION and press ENTER into NAV SETUP
7. Assure the following settings are correct:
    a. POSITION FRMT: UTM/UPS
    b. MAP DATUM: NAD 83 CONUS
    c. CDI: +/-0.25 or +/- 0.02
    d. UNITS: METRIC
    e. HEADING: AUTO
8. Press PAGE to exit NAV SETUP
9. Highlight ALARMS and press ENTER into ALARMS SETUP
10. Assure the following settings are correct:

    a. Arrival: Off
    b. CDI Alarm: Off
11. Press PAGE twice to return to MAIN MENU
12. Press PAGE three times to get to MAP PAGE
13. Press RIGHT ARROW twice to highlight OPT and press ENTER
14. Highlight MAP SETUP and press ENTER into MAP SETUP
15. Assure the following settings are correct:
    a. MAP: TRACK UP
    b. RINGS: NO
    c. ROUTE: NO
    d. NEAREST: YES
    e. NAMES: YES
    f. TRACK LOG: NO
16. Press PAGE to return to MAP PAGE
17. Highlight OPT and press ENTER
18. Highlight TRACK SETUP and press ENTER into TRACK SETUP
19. Assure the following settings are correct:
    a. RECORD: OFF
    b. METHOD: AUTO
20. Press PAGE to return to MAP PAGE

Uploading and Downloading Coordinates

1. If necessary, download Waypoint Express from the Internet. The software is at: http://www.tapr.org/~kh2z/Waypoint/. Follow the instructions on the site in order to download and install.
2. Creating a text file from an ArcView GIS shapefile:
    a. Open ArcView or ArcGIS and load the Waypoint Express extension from the FILE – EXTENSIONS menu
    b. Make sure that the theme you want to convert is active, then select the points that you want either using the select tool on the map or the select tool on the table
    c. Go to WAYPOINT EXPRESS – SHAPEFILE – WAYPOINT and follow prompts
        I. Select the theme containing the points
        II. Select the field with the unique field site code (this code cannot exceed six characters, if it does it will be truncated)
        III. Select the appropriate projection: NAD 83 UTM Zone 10
        IV. Select name and location for file
3. Uploading a text file:
    a. Turn on the GPS unit and link to your computer using the interface cable
    b. Open the program Waypoint Plus (shareware available at http://www.tapr.org/~kh2z/Waypoint/)
    c. Go to FILE – OPEN and open the text file (you will need to go to FILE – CLEAR – WAYPOINTS in order to upload subsequent files)
    d. Select WAYPOINTS – UPLOAD
    e. Check your GPS unit to assure the transfer was successful
4. Downloading coordinates:
    a. Turn on the GPS unit and link to your computer using the interface cable

    b. Open the program Waypoint Plus
    c. Go to WAYPOINTS – DOWNLOAD and save as a comma delimited file under a pathway
    d. The coordinates should be named with the observers initials and the date (e.g., jls 20070401) and saved into the folder:
                    c/GPS/downloads/year/

Locating Field Sites

1. Press GOTO
2. Scroll to the waypoint that you are locating and press ENTER
3. Use the direction heading and distance to navigate to the site using a compass

Marking Locations

1. Make sure that the SATELLITE PAGE reads 3D (2D minimum) and had EPE less than 12
2. Press MARK
3. Highlight AVERAGE and press ENTER
4. Write the waypoint number in GPS # on Point Count Route Description Form, or highlight WAYPOINT and enter an appropriate name for your point (always use standard codes combining station/route and point number as they appear on Point Count Data Form [e.g., GERB01: Station/Route = GERB, Point Number = 1])
5. Note accuracy in +/- on the Site Description Form before pressing ENTER
6. Press ENTER to finish marking waypoint
7. Press PAGE to MAIN MENU
8. Highlight NEAREST WPTS and press ENTER into NEAREST WPTS list
9. Highlight the waypoint on the top of the list, which should be the one you just marked, and press ENTER
10. Mark UTMs in UTMs on Site Description Form
11. Copy down the name of your waypoint and the accuracy in your field notebook
12. Highlight SAVE and press ENTER
13. PAGE to the MAP PAGE and highlight your new waypoint name and press ENTER
14. Copy down the UTM location in your field notebook.